

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE*In re* Patent Application of:

Docket No.: P27202

Douglas. D. COOLBAUGH et al.

Serial No: 10/711,744

Group Art Unit: 2826

Confirmation No. 5743

Filed: October 1, 2004

Examiner: T. L. Dickey

For: **REDUCED GUARD RING IN SCHOTTKY BARRIER DIODE STRUCTURE**

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Window, Mail Stop AF
Randolph Building
401 Dulany Street
Alexandria, VA 22314

AMENDMENT UNDER 37 C.F.R. § 1.116

Sir:

In response to the **final Office Action** mailed **February 22, 2006** ("Office Action"), Applicants respectfully request reconsideration of the application in view of the following Amendments and Remarks.

If extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned for under 37 C.F.R. § 1.136(a). Applicants believe that no further fees for net addition of claims are required at this time. Any fees required for further extensions of time and any fees for the net addition of claims are hereby authorized to be charged to **IBM Deposit Account No. 09-0456** (Burlington).

Amendments to the claims begin on page 2; and

Remarks begin on page 6.

AMENDMENT TO THE CLAIMS

In the Claims:

Please **CANCEL** claims 9-13 without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Previously Presented) A Schottky barrier diode, comprising:

an active area;

a guard ring that is one of disjointed, a non-closed loop, and missing a portion in at least one dimension;

at least one separation region bounding the active area; and

an electrode formed in the active area to form a Schottky junction, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction.
2. (Original) The Schottky barrier diode according to claim 1, wherein the electrode comprises a silicide.
3. (Original) The Schottky barrier diode according to claim 1, wherein the at least one separation region is a dielectric material selected from a group consisting of an oxide, a polymer, a glass, and a nitride.

4. (Previously Presented) The Schottky barrier diode according to claim 1, wherein the portion of the guard ring is removed from about the active area.

5. (Original) The Schottky barrier diode according to claim 1, wherein the at least one separation region bounds the active area in one dimension.

6. (Original) The Schottky barrier diode according to claim 1, wherein the at least one separation region comprises a plurality of separation regions, and where the plurality of separation regions bound the active area in two dimensions.

7. (Previously Presented) The Schottky barrier diode according to claim 1, wherein the at least one separation region partially surrounds the active region.

8. (Previously Presented) The Schottky barrier diode according to claim 1, wherein the Schottky junction has edges spaced away from the at least one separation region bounding the active area.

Claims 9 through 13. (cancel)

14. (Previously Presented) A process for forming a Schottky barrier diode, comprising the steps of:

forming an active area in a substrate;

forming an electrode on the substrate in the active area to form a Schottky junction;

forming a guard ring that is one of disjointed, a non-closed ring, and missing a portion in at least one dimension; and

forming at least one separation region on the substrate where the at least one separation region is bounded on one side by the active area, wherein the at least one separation region reduces parasitic capacitance about the Schottky junction.

15. (Original) The method according to claim 14, wherein the electrode is formed with a silicide.

16. (Original) The method according to claim 14, wherein the at least one separation region is formed with a dielectric material selected from a group consisting of an oxide, a polymer, a glass, and a nitride.

17. (Original) The method according to claim 14, wherein the at least one separation region is formed to bound the active area of the Schottky junction in one dimension.

18. (Original) The method according to claim 14, wherein forming the at least one separation region comprises forming a plurality of separation regions and the plurality of separation regions bound the active area of the Schottky junction in two dimensions.

Claim 19. (Canceled).

20. (Previously Presented) The method according to claim 14, wherein the Schottky junction is formed to have edges spaced away the at least one separation region bounding the active area.

21. (Previously Presented) The method according to claim 14, wherein the at least one separation region comprises two spaced apart separation regions.

22. (Previously Presented) The method according to claim 14, wherein the at least one separation region comprises a U-shaped separation region.

REMARKS

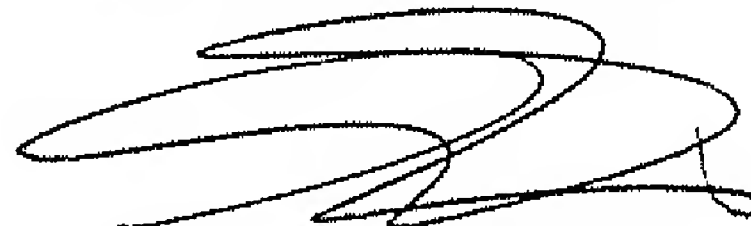
Claims 1-8, 14-18 and 20-22 are currently pending. By this amendment, claims 9-13 are canceled. Reconsideration of the rejected claims in view of the above amendments and the following remarks is respectfully requested.

Allowed Claims

Applicants appreciate the indication that claims 1-8 and 14-22 are allowed. Applicants note that claim 19 was previously canceled and as such claims 1-8, 14-18 and 20-22 should be allowed. Applicants have canceled claims 9-13 without prejudice or disclaimer and with the reservation to file a continuation application to further pursue these claims. In view of the cancellation of the rejected claims, Applicants request allowance of the entire application.

The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required.

Respectfully submitted,
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